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HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303				
			EXAMINER GONZALEZ, JULIO C	
			ART UNIT 2834	PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/803,876
Filing Date: March 12, 2001
Appellant(s): PEACHEE ET AL.

Michael D. Wiggins
34,754
For Appellant

EXAMINER'S ANSWER

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This is in response to the appeal brief filed June 07, 2004.

Due to the date of the Appeal Brief being filed (06/07/04), the Appeal Brief is written in the previous appeal brief format. Also, the Examiner's Answer is written in the previous format.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is incorrect.

A correct statement of the status of the claims is as follows:

This appeal involves claims 1-5, 7-13, 16-18, 20 and 21.

Claims 6, 14 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14, 15, 17, 18, 19, 20 and 21 have been amended subsequent to the final rejection.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-5, 9-13, 16-18, 6, 7, 14, 15, 19 and 20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

5,811,905	Tang	09-1998
5,583,387	Takeuchi et al	12-1996
JP411289701	Oki	10-1999
6,369,687	Akita et al	04-2002

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

- (a) Claims 1-5, 8-13, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Takeuchi et al and Oki (JP411289701A).

Tang discloses a switched reluctance machine having with a stator core, winding and rotor poles (see figure 1). Also, the reluctance machine has a sensorless system for controlling the machine (see abstract) and that the winding wire may be energized based on the rotor position (column 1, lines 15-24 & column 5, lines 28-32). Although it is well known in the art for electrical machines such as motors to have a slot fill winding of more than 65% since it is not desirable to have empty spaces, Tang discloses inherently that the winding may have a slot fill greater than 65% (see figure 1).

However, Tang does not disclose that the stator can be made of a plurality of stator segments.

On the other hand, Takeuchi et al discloses for the purpose of purpose of increasing the efficiency of a motor, a machine having a plurality of circumferentially-spaced stator segments 11 with winding 16 and insulation 15 between the stator core plates and the winding 16 (see figure 2).

Moreover, the stator segments 11 have a tooth section that extends radially and projections extending radially (see figure 1).

Moreover, Oki teaches for more emphasis for the purpose of making a motor with a superior electromagnetic performance that a reluctance motor may be made by having a segmented stator (see figure 4)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a reluctance machine as disclosed by Tang and to modify the invention by forming the stator from a plurality of stator segments for the purpose of increasing the efficiency of a motor as disclosed by Takeuchi et al and to emphasized a segmented stator for a reluctance motor for the purpose of making a motor with a superior electromagnetic performance as disclosed by Oki.

(b) Claims 6, 7, 14, 15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang, Takeuchi et al and Oki as applied to claims 1, 9 and 16 above, and further in view of Akita et al.

The combined electrical machine discloses all of the elements above. However, the combined electrical machine does not disclose first and second end caps and central portions.

On the other hand, Akita et al discloses for the purpose of improving the magnetic performance and increasing the mechanical precision for an iron core assembly that a first and second end cap are connected at axial ends of stator segments (see figure 36) and that the stator segments have central portions so as to hold the stator plates together (see figures 49(b), 50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electrical machine as disclosed above and to modify the invention by using end caps for the purpose of improving the magnetic performance and increasing the mechanical precision for an iron core assembly as disclosed by Akita et al.

(c) Claims 6, 14 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(11) Response to Argument

(a) The Appeal Brief alleges that the Tang (main reference) does not disclose a switch reluctance machine. Tang is strongly directed to a switch reluctance machine (see title of invention & abstract).

With respect to the segmented stator, Takeuchi et al (secondary reference) discloses an electrical machine with a segmented stator and provides a strong motivation for making a segmented stator, such as, achieving a winding with high density and saving space at the end of the windings, thus making a highly efficient electrical machine (column 1, lines 9-11, 21-24; column 2, lines 27-29).

With respect to the slot fill being greater than 65%, Tang discloses inherently that a slot fill greater 65% is shown. Also, for more emphasis on the subject, which was explained and pointed out by the Examiner on the Final Office Action sent on 12/16/03, Takeuchi discloses very explicitly having a 70% slot fill (column 3, lines 41-44) and provides a strong motivation for doing so, which is for making a stator with a compact and space saving design (column 3, lines 44, 45). Also, providing a 70% slot fill avoids short-circuits being made to the windings, thus improves the overall efficiency of the machine (column 3, line 52 – column 4, line 7). Such references are not new to the Applicant since the same references (Tang & Takeuchi) were used in the Final Office Action sent on 12/16/03, Non-Final Office Action sent on 05/21/03, Final Office Action sent on 11/22/02 and Non-Final Office Action sent on 05/02/02.

With respect to Applicant's comment and the Declaration of Dr. Wallace submitted on 02/24/03, which estates that the prior art does not show a switch reluctance machine with a segmented stator, respectfully, Oki discloses having segmented stator and such stator is applied to a switch reluctance machine (see figure 4 & title of invention). Such third reference (Oki) was mainly used for showing that a switch reluctance machine can have a segmented stator and as pointed out by the Applicant's Appeal Brief, such procedure in making a segmented stator to a switch reluctance machine improves the manufacturing efficiency of the device (Appeals Brief's page 7, paragraph 3).

With respect to the Applicant's comment in the Appeal Brief, which ~~x~~states that the switch reluctance machine has sensorless control system, Tang discloses using a sensorless technique for the switch reluctance machine (see abstract of Tang). The claims (claim 8 and 21) only mention that a sensorless technique is used. Respectfully, the claims do not describe how and what drives the sensorless technique. There are many techniques and Tang discloses using a sensorless technique (see abstract of Tang).

With respect to the Applicant's comment that the prior art does not disclose having lateral slits and first and second central portions, Akita et al discloses the stator

plates have lateral slits 8a (see figure 14, 49(b)) and central portions 83(c) for holding the plates together (see figures 49(b) & 50).

(b) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tang discloses a switch reluctance machine, Takeuchi et al teaches having an electrical machine with a segmented stator and provides a strong motivation for having the segmented stator, such as achieving a high density and space saving design for the windings, which improves the efficiency of the machine and the manufacturing process (column 1, lines 9-11, 22-24; column 2, lines 21-29) and Oki shows a reluctance machine having a segmented stator (see title and figure 4, which as explained by the Applicant, it improves the manufacturing process. Other advantages disclosed are that less tension is applied to the coils, superiority electromagnetic performances and enhances the capability

of the reluctance machine. All three references (Tang, Takeuchi et al and Oki) provide strong motivations and reasons for using their teachings.

(c) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the electrical uniformity of the inductances and resistances values of the stator poles are improved; the diameter of the winding wire can be increased using the same number of turns and the increased diameter of the winding wire allows increased current to be driven through the windings, which increases torque output) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jcg

April 12, 2005

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